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Daniel B. Schein
Daniel B. Schein, Ph.D., Esq., Reg. No. 33,551

5 January 2005
Date

Case No. 11493-3

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Aroon Raman et al.

Serial No: 10/019,634

Examiner: Neil S. Levy

Filed: 12/27/2001

Group Art Unit: 1616

For: A SUBSTANCE DELIVERY
DEVICE

**PETITION FOR REVIVAL OF AN APPLICATION FOR PATENT
ABANDONED UNINTENTIONALLY UNDER 37 CFR 1.137(b)**

Mail Stop Petition
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This is in response to the Decision Dismissing Petition dated December 15, 2004 for Revival Under 37 CFR 1.137(a).

**APPLICANT HEREBY PETITIONS FOR REVIVAL OF THIS
APPLICATION UNDER 37 CFR 1.137(b).**

The above-identified application became abandoned for failure to file a timely reply to the Office Action mailed February 20, 2004. The undersigned

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Serial No. 10/019,634

attorney for applicants respectfully submits that the entire delay in filing the required response from the due date until the filing of a grantable petition was unintentional.

SUBMITTED HEREWITH ARE:

1. Petition fee for other than small entity – (37 CFR 1.17(m)) via a Form PTO-2038 authorizing the charge of all fees associated herewith to be charged to the credit card identified thereon.
2. A Copy of the reply filed September 6, 2004 to the Office Action mailed February 20, 2004.
3. A Copy of the Request for Continued Examination filed September 6, 2004 (fee previously submitted), but any fee deficiency may be charged to the credit card identified on the PTO-2038 filed herewith.

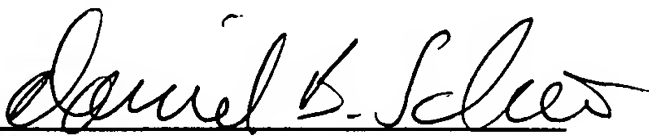
NO TERMINAL DISCLAIMER REQUIRED

Since this utility application was filed on or after June 8, 1995, no terminal disclaimer is required.

I respectfully ask that the delay in filing the response be held to be unintentional, and that the application be revived.

Respectfully submitted,

Dated: 5 January 2005


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IN THE CLAIMS:

1. (Amended hereby) A substance delivery device comprising a combustible paperboard strip and at least one of a substance toxic to insects and a perfume, wherein said paperboard strip is formed from felting fibres from solution.
2. (Original) A delivery device as claimed in claim 1, in which the strip is in the form of a coil.
3. (Original) A delivery device as claimed in claim 1 or claim 2, which includes a flexible backing sheet for supporting the combustible paperboard strip.
4. (Original) A delivery device as claimed in claim 3, in which the flexible backing sheet is not capable of self sustaining combustion.
5. (Previously Amended) A delivery device as claimed in claim 1, in which the material of the paperboard strip includes a combustion promoter.
6. (Previously Amended) A delivery device as claimed in claim 5, in which the combustion promoter is distributed substantially uniformly throughout the paperboard strip.
7. (Twice Amended Previously) A delivery device as claimed in claim 1, in which the combustion promoter comprises a charcoal powder, the charcoal powder preferably being present in the paperboard at about 1 to 10% by weight of the dry paperboard.
8. (Previously Amended) A delivery device as claimed in claim 1, in which the paperboard strip has a substantially rectangular cross section, the thickness of the strip being at least about 0.2 mm and not more than about 1.9 mm.

9. (Previously Amended) A delivery device as claimed in claim 8, in which the width of the strip is at least about 2 mm and not being more than about 6 mm.
10. (Previously Amended) A delivery device as claimed in claim 1, in which the density of the paperboard strip is at least about 400 kg.m^{-3} and not more than about 1000 kg.m^{-3} .
11. (Previously Amended) A method of manufacture of a substance delivery device comprising the steps of adding a furnish comprising fibrous structures to a fluid to form a fluid suspension;
 felting the fibrous structures from the fluid suspension to form a mesh of interlocked fibrous structures;
 drying the mesh to form a paperboard; and,
 adding at least one of a substance toxic to insects or a perfume to the paperboard.
12. (Original) A method as claimed in claim 11, in which the density of the resulting paperboard, after it has been dried, is not more than about 1000 kg.m^{-3} .
13. (Previously Amended) A method as claimed in claim 11 or claim 12, further comprising the step of cutting the paperboard to form a strip.
14. (Previously Amended) A method as claimed in claim 11, which includes the step of attaching the paperboard to a flexible backing sheet.
15. (Original) A method as claimed in claim 14, in which the backing sheet is attached by means of an adhesive, and in which the method includes the step of drying the adhesive while restraining the paperboard and backing sheet to prevent distortion of the paperboard.
16. (Previously Amended) A method as claimed in claim 11, in which the furnish

comprises waste paper.

17. (Previously Amended) A method as claimed in claim 11, in which the furnish comprises wood free fibers.

18. (Previously Amended) A method as claimed in claim 11, which further comprises the step of adding a combustion promoter to the fluid suspension.

19. (Previously Amended) A method as claimed in claim 11, wherein the combustion promoter comprises at least one of a charcoal and an organic dye.

20. (Amended hereby) An insect repellant device comprising a combustible paperboard strip which includes a substance toxic to insects, wherein said paperboard strip is formed from felting fibres from solution.

21. (Original) A method of manufacture of an insect repellant device comprising the steps of:

adding a finish comprising fibrous structures to a fluid to form a fluid suspension;
felting the fibrous structures from the fluid suspension to form a structure which comprises a mesh of interlocked fibres;
drying the mesh to form a paperboard; and,
adding a substance toxic to insects to the paperboard.

22-25. (Cancelled).

26. (Previously Added) A delivery device as claimed in claim 1, in which the paperboard strip has a substantially rectangular cross section, the thickness of the strip being at least about 0.6 mm and not more than about 1.8 mm.

27 (Previously Added) A delivery device as claimed in claim 1, in the which the width of the strip is at least about 5 mm and not more than about 6 mm.

28. (Previously Added) A delivery device as claimed in claim 1, in which the density of the paperboard strip is at least about 550 kg.m^{-3} and not more than about 650 kg.m^{-3} .
29. (Previously Added) A method as claimed in claim 16 wherein the waste paper is comprised of kraft pulp.
30. (Previously Added) A method as claimed in claim 16 wherein the waste paper is comprised of newspaper waste.
31. (Previously Added) A method as claimed in claim 17 wherein the wood free fibers are comprised of bagasse.
32. (Previously Added) A method as claimed in claim 17 wherein the wood free fibers are comprised of straw.
33. (Previously Added) A method as claimed in claim 17 wherein the wood free fibers are comprised of bamboo.
34. (Previously Amended) A delivery device as claimed in claim 5, in which the combustion promoter is comprised of an organic dye.
35. (New) A method as claimed in claim 11 or claim 12, further comprising the step of cutting the paperboard to form a strip, wherein said strip is in the form of a coil.

REMARKS

Claims 1-21 and 26-35 are pending. Claims 1 and 20 have been amended to recite "wherein said paperboard strip is formed from felting fibres from solution" to highlight the distinction between the claimed invention and the art cited in the Office Action mailed February 20, 2004.

Rejections Under 35 U.S.C. §102(b)

Claims 1-6, 26-28 and 34 stand rejected as anticipated by GB 2139498 ("Kuan"), U.S. Patent 5,447,713 ("Eisner"), and U.S. Patent 2,224,622 ("Waples"). The Kuan, Eisner and Waples patents do not disclose a combustible **paperboard strip** useful as a substance delivery device for a substance toxic to insects and/or a perfume. The materials used in Kuan, Eisner and Waples are formed by a different process and have different properties from paperboard.

Kuan's strip is formed of a "filler" made of charcoal as the primary ingredient, wood powder and starch, which are combined to form a paste and deposited onto a paper backing, page 1, lines 38-99. Kuan requires a backing sheet because the filler is frangible and does not have the strength and flexibility of the paperboard of the present invention. The paperboard used in the present invention has very different properties than Kuan's filler, and is formed by a different process, specifically felting of fibers from a solution as recited. Pages 1 and 2 of the present specification outline how paperboard is very different from materials used by Kuan, and the other cited art, and the use of paperboard in the present invention leads to substantial improvements in performance over prior art substance delivery devices. Hence, Kuan cannot anticipate the present invention as it does not teach or suggest the use of paperboard formed by felting fibres from solution for a combustible insect repellent.

Eisner discloses the use of a woodchip and binder combination or pressed wood fibers, which leads to a fibreboard product that is very different in properties from the paperboard recited in the claims. As can be seen by the attached definition of medium-density fibreboard it is an engineered wood product (definitions from "Wikipedia" found on the internet at <http://www.free-definition.com/Engineered-wood.html>). The attached definition of engineered wood products shows that they are formed of adhesives and wood strands, fibers or veneers. The properties of Eisner's fibreboard and how it is

produced are thus very different from the paperboard recited in the present claims. The process used to form Eisner's fibreboard cannot produce paperboard.

Waples discloses a mixture of resins with a vegetable fiber, wood pulp or paper. Resin bound delivery devices tend to "dust" when small particles break off during handling. Further, use of wood fibers leads to a less flexible product than paperboard which uses the cellulosic fibers used in making paper. Paperboard is formed by a process that is very distinct from that used in Waples, leading to a product with very different properties. In contrast to Waples' frangible product that can dust, the paperboard of the present invention is formed by felting fibers from solution and drying the resulting interlocked fiber mesh. This results in a flexible material of a uniform consistency, which can be readily distinguished from other products by visual inspection.

In view of the clear distinctions and benefits of paperboard for a combustible insect repellant from the materials disclosed in the prior art, withdrawal of the rejections under 35 U.S.C. §102(b) is warranted and respectfully requested.

Rejection Under 35 U.S.C. §103

Claims 1, 2, 5, 6, 8, 9, 11, 16-21, 26, 27, and 29-34 stand rejected as obvious over Chinese Patent 2,356,495 ("CN 2"), in view of U.S. Patent 3,767,785 ("Bordenca"), Waples, and U.S. Patent 5,505,491 ("Yano").

Neither CN 2 or Yano disclose the use of paperboard. CN 2 teaches paper, not paperboard. The paper coils taught by CN 2 suffer from unpredictable burn rates and poor structural strength. The present inventors found that paperboard, which is a very different material and formed by a different process from that taught by CN 2 and Yano, provides significant improved performance over the different materials used in the prior art. Yano mixes vegetable powder and cotton fibres, and hence does not teach or suggest paperboard.

Bordenca is a patent issued in 1969 that teaches away from the present invention as it teaches adding insect repellant to a packaging material to preserve the packaging, whereas the present invention is directed to forming a product that will be consumed by burning at a controlled rate and that contains sufficient amount of a

substance toxic to insects that it will provide a controlled release thereof when burned to repel insects. The Bordenca patent was issued for approximately thirty years before the present invention, yet no combustible substance delivery devices were formed of paperboard during all this time despite the surprising benefits discovered by the present inventors by using same. There is nothing in Bordenca or the prior art that would lead one of skill in the art to modify Bordenca so that Bordenca's packaging could be deliberately burned, the opposite of Bordenca's stated goal of preserving Bordenca's packaging, with any reasonable expectation that it would be suitable as a practical insect repellant. In view of the long felt but unsolved need for an improved insect repellant strip, it is respectfully submitted that the present invention is not obvious over Bordenca, alone or in combination with the prior art.

As noted above, Waples does not use paperboard nor does it suggest an alternative to its resin bound products, and therefore it cannot teach or make obvious the present invention.

The present invention provides non-obvious solutions to problems that have confronted the insect repellant industry for many years, specifically insect repellant coil breakage due to overly brittle compositions and unpredictable or undesirable burn rates. It is respectfully noted that an estimated 100 million mosquito coils are sold worldwide each year, predominantly in third world countries with poor distribution networks. This makes product performance critical for remotely-manufactured products as returns are difficult or impossible. Further, use of these products is critical to reducing insect-borne diseases in many impoverished areas, where cost of manufacture and delivery must be minimized. A plethora of local manufacturing facilities leads to increased costs due to loss of economies of scale.

The majority of coils sold are woodchip/resin compositions impregnated with insecticide. These are brittle, and approximately one third arrive at retail outlets damaged in some form. These prior art coils also produce a powder or "dust" resulting from their frangible and inflexible nature, which can be hazardous to workers involved in their manufacture and distribution. Further, in order to obtain long burn times, prior art coils had to be very thick, increasing the bulk and weight thereof, and consequently leading to higher shipping and storage costs. Paper coils, readily distinguished from the

paperboard products of the present inventions, suffer from fast and unpredictable burn rates.

The present inventions surprisingly accomplish stable and predicable burn rates with a material that is less dense and far more flexible than prior woodchip and/or resin bound products. As a result, far less product is damaged in transit, and the lighter weight leads to substantial savings in shipments. Further, since the present invention can be produced at a remote central location where manufacturing costs can be minimized, economies of scale are introduced to a highly competitive market.

Insect repellant coils and paperboard have been known for many years. Despite the many advantages from making a paperboard substance delivery device in accordance with the present inventions, the prior art is devoid of any teaching or suggestion of same. In view of the forgoing it is clear that the present inventions are not obvious, and withdrawal of the rejection under 35 U.S.C. §103(a) is respectfully requested.

If there are any issues that the Examiner would like to discuss prior to issuing a Notice of Allowance, please telephone the undersigned at 408-294-6750 to expedite allowance.

Respectfully submitted,

6 September 2004
Date

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Medium-density fibreboard

- definition, meaning, explanation & information in free-definition.com

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Books about 'Medium-density fibreboard' at: amazon.com or amazon.co.uk

Medium-density fibreboard (MDF), is an engineered wood product formed by breaking down softwood into wood fibres, combining it with wax and resin, and forming panels by applying high temperature and pressure.

Large-scale production of MDF began in the 1980s. Its name derives from the distinction in densities of fibreboard. MDF typically has a density of around 800 kg/m³. Low density fibreboard, such as caneite, ranges in density from 160 to 450 kg/m³, while high density fibreboard, such as masonite, has a density of around 1000 kg/m³. The same manufacturing process is used.

MDF is useful in many applications, particularly where particleboard was previously used. It is not useful for outdoor use because it will swell upon contact with water; nonetheless, it has better moisture tolerance than particleboard. Because MDF is fibre-based, it has a remarkably consistent structure. This quality makes it easy to machine or employ in woodworking applications. MDF is often used with melamine or wood veneers.

One contentious issue is the use of formaldehyde resins and the associated health risks. Thus, other resins are being introduced.

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Engineered wood

- definition, meaning, explanation & information in free-definition.com

Books about 'Engineered wood' at: amazon.com or amazon.co.uk

Engineered wood includes a range of derivative wood products which are manufactured by binding together wood strands, fibers, or veneers with adhesives to form composite materials. These products are engineered to precise design specifications which are tested to meet national or international standards.

Engineered wood products include plywood, medium density fibreboard (MDF), oriented strand board (OSB), particleboard, glued laminated timber (glulam), laminated veneer lumber (LVL), and structural I-beams. Engineered wood panels are also made from rye straw, wheat straw, or sugar cane rind; in which case they contain no actual wood.

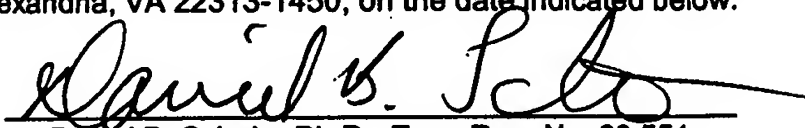
Engineered wood products are used in a variety of applications, often replacing solid wood (lumber) due to a number of advantages. Because engineered wood is man-made, it can be designed to meet application-specific performance requirements. Unlike solid wood, large panels of engineered wood may be constructed from small trees. Further, engineered wood products are often stronger and less prone to humidity-induced warping. Although engineered wood products are resource efficient, they are more expensive to produce than solid lumber in terms of time, money, and energy.

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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope, with sufficient postage, addressed to: Mail Stop Petitions, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date indicated below:


Daniel B. Schein, Ph.D., Esq., Reg. No. 33,551


Date of Signature

Our Ref. No. 11493-3

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

RAMAN et al.

Serial No: 10/019,634

Filed: December 27, 2001

For: A SUBSTANCE DELIVERY
DEVICE

Examiner: Neil S. Levy

Group Art Unit: 1616

REQUEST FOR CONTINUED EXAMINATION (37 CFR § 1.114)

Mail Stop Petitions
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Applicant requests continued examination under 37 CFR § 1.114.



Applicant is:



a small entity



other than small entity



The fee of \$770 set forth in § 1.17(e) is filed along with this request:



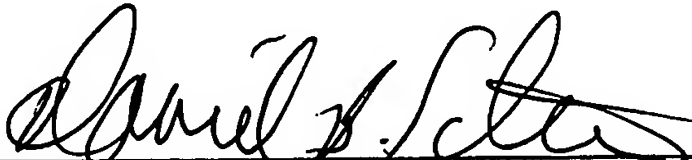
Attached is a check for the § 1.17(e) fee.

Serial No.: 10/019,634
Group Art Unit: 1616

- ☒ Charge the credit card for which information is provided on the attached Form PTO-2038.
- ☒ A submission must be filed along with this request. The following submission(s) is(are) filed herewith:
- ☐ An Information Disclosure Statement
 - ☒ An Amendment to the written description, claims, or drawings
 - ☐ New Arguments and/or New Evidence in Support of Patentability
 - ☒ Other: Petition Under 37 CFR §1.137(a), with supporting Declaration.
- ☒ A petition and fee for an extension of the time is enclosed herewith.
- ☐ A check in the amount of \$_____ to cover the additional claims fee is enclosed.
- ☒ Charge all fees associated with the submissions made hereby to the card for which information is provided on the attached Form PTO-2038.

Respectfully submitted,

Dated: 6 September 2004


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